

Claims:

1. Blood analyzer (2) having a device body (4) with a blood sampling device (6) which has a pricking element (8, 114, 122, 232), with a testing means (10) for accommodating a minimal quantity of blood, having an analyzer device (12) which comprises an electronic analyzer and having a display device (14), together forming a complete system that can be handled as a single device, whereby the device body (4) has a pricking position (22) which is assigned to the working position (34) of the pricking element (8, 114, 122, 232) for coming in contact with a skin surface of a user and a charging position (30) designed at another location on the body of the device for charging a minimal quantity of blood coming from the previously pricked skin surface onto a testing means (10), whereby a plurality of testing means (10) and pricking elements (8, 114, 122, 232) can be inserted into the device and can be brought one after the other into a working position (30, 34) for performing multiple measurements, whereby when a pricking element (8, 114, 122, 232) is positioned in its working position (34), the pricking element can be inserted into the skin surface of a user which is brought into the pricking position (22) and blood coming from the skin surface can be charged to a testing means (10) by being brought in contact with the skin surface in the charging position (30), said testing means being in a working position (32) of the testing means, **characterized in that** the testing means (10) and the pricking elements (8, 114, 122, 232) are arranged on a carrier (50) which is rotatable with respect to the body (4) of the device and can be inserted together with it into the device, and by rotating the carrier (50) the testing means (10) and the pricking elements (8, 114, 122, 232) can be brought into different working positions (32, 34) with respect to the body of the device.
2. Blood analyzer according to Claim 1, characterized in that the pricking elements and the testing means are arranged on the same carrier, which can be handled manually.
3. Blood analyzer according to Claim 1 or 2, characterized in that the carrier (50) comprises a first carrier part (52) for the testing means (10) and a second carrier part (56, 170) for the pricking elements (8, 232).
4. Blood analyzer according to Claim 3, characterized in that the two carrier parts (52, 56) can be assembled to form a manually operable unit.

5. Blood analyzer according to Claim 3 or 4, characterized in that the carrier parts (52, 56) can be linked together in a rotationally fixed manner.
6. Blood analyzer according to one or more of the preceding claims, characterized in that the carrier (50, 170) has a central recess (80) within which a drive device (44, 48) for the blood sampling device (6) is provided.
7. Blood analyzer according to one or more of the preceding claims, characterized in that the carrier (50, 170) is designed in the form of a ring and is rotatable about the center of the ring.
8. Blood analyzer according to one or more of the preceding claims, characterized in that a drive device for the carrier includes internal gearing (82).
9. Blood analyzer according to one or more of the preceding claims, characterized in that the pricking elements (8, 114, 232) are arranged on the carrier (50, 170) in such a way that when they are in the working position, they execute a pricking movement in the radial direction with respect to the rotatability of the carrier.
10. Blood analyzer according to one or more of the preceding Claims 1 through 8, characterized in that the pricking elements (122) are arranged on the carrier (126) in such a way that when they are in the working position, they execute a pricking movement in the axial direction with respect to the rotatability of the carrier.
11. Blood analyzer according to one or more of the preceding claims, characterized in that the pricking elements (8, 114, 122, 232) are surrounded by a sterility barrier on the carrier (50, 126, 170) before execution of a pricking operation.
12. Blood analyzer according to one or more of the preceding claims, characterized in that before execution of a pricking operation, a particular pricking element (114) is arranged in a sleeve means (100), forming a cylindrical space, and is held by a plunger means (106) which is movable in the sleeve means.
13. Blood analyzer according to Claim 12, characterized in that the pricking element (114) forms an injection part of the plunger means (106) designed as a plastic syringe part.

14. Blood analyzer according to Claim 12 or 13, characterized in that a sterility barrier is formed by the sleeve means (100) that is closed on all sides and by the plunger means (106).
15. Blood analyzer according to Claim 12, 13 or 14, characterized in that the sleeve means (100) is covered by a film (112) on its end facing away from the plunger means (106).
16. Blood analyzer according to one of Claims 12 through 15, characterized in that the plunger means (106) has a sealing means (118, 120) with respect to a wall (116) of the cylinder space.
17. Blood analyzer according to one of Claims 12 through 16, characterized in that multiple sleeve means (100) are joined together in the form of a strip and the ends of the strips are joined together to form a circular shape.
18. Blood analyzer according to one or more of the preceding claims, characterized by multiple recesses (124) in the carrier (126) in each of which is arranged a pricking element (122).
19. Blood analyzer according to Claim 18, characterized in that a wall (133) which borders the recess (124) is designed to be deformable so that it can be deflected by a driving device of the blood sampling device to execute the pricking procedure.
20. Blood analyzer according to Claim 18 or 19, characterized in that a wall (133) which borders the recess (124) has weakened zones to facilitate the deformability.
21. Blood analyzer according to one of Claims 18, 19 or 20, characterized in that the recess (124) is designed like a trough or like a half shell.
22. Blood analyzer according to one of Claims 18 through 21, characterized in that the sterility barrier is formed by a film-like covering means (134) which covers the recess (124).
23. Blood analyzer according to one or more of the preceding claims, characterized in that the pricking elements (140) carry a safety cap means (147) on their free end before executing a pricking operation.

24. Blood analyzer according to Claim 23, characterized in that the safety cap means (147) is releasable from the pricking element (140) immediately before execution of the pricking operation.

25. Blood analyzer according to Claim 24, characterized in that the respective safety cap means (147) can be removed from the path of movement of the pricking element and brought into a receptacle space (152) after being released from the respective pricking element (140).

26. Blood analyzer according to one or more of the preceding claims, characterized in that the test means (10) are arranged on the carrier (50) in such a way that they are axially oriented with respect to the rotatability of the carrier.

27. Blood analyzer according to one or more of the preceding claims, characterized in that the carrier (50) has a carrier part (52) for the test means (10), the carrier part in particular being in the form of a ring disk, the plane of the carrier part being oriented perpendicular to the axis of rotation (70) of the carrier (50).

28. Blood sugar analysis device according to one or more of the preceding claims, characterized in that the test means (10) are provided in recesses (68) of the carrier part (52), in particular in the form of a ring disk.

29. Blood sugar analysis device according to one or more of the preceding claims, characterized in that the charging position (30) can be covered by a movable cover part (28) when it is not needed.

30. Blood sugar analysis device according to Claim 29, characterized in that a drive device for the pricking element can be activated by moving the covering part (28) in the direction of releasing the charging position (30).

31. Blood sugar analysis device according to one or more of the preceding claims, characterized in that the drive device for the pricking element can be activated by clamping a spring means (156).
32. Blood analyzer according to one or more of the preceding claims, characterized in that a manually movable control element (238) is provided and is connected to the drive device (250) for the pricking element (8) and to the rotatable carrier (60), so that when there is a movement of the control element (238), the drive device (250) for the pricking element is activated and there is a rotational movement of the carrier (60).
33. Blood analyzer according to Claim 32, characterized in that during a first phase of the movement in a first actuating direction, the control element (238) can be brought into a drive connection with the carrier (60), and during a second phase of the movement, it can be brought out of the drive connection by moving it in the direction opposite the actuator direction.
34. Blood analyzer according to Claim 22 or 33, characterized in that a gear drive is provided for coupling the control element (238) to the carrier.
35. Blood analyzer according to Claim 32, 33 or 34, characterized in that the drive mechanism (250) for the pricking element comprises a bending spring (252), and the control element (238) acts on a receptacle (258) for the bending spring and pivots this receptacle into the plane of bending of the bending spring.
36. Blood analyzer according to Claim 35, characterized in that the bending spring can be clamped into a stable clamped position across a dead point.
37. Blood analyzer according to one of Claims 32 through 36, characterized in that the manually movable control element (238) is formed by the covering part (28).
38. Blood analyzer according to one or more of the preceding claims, characterized in that a triggering device (254) for the drive device (250) for the pricking element can be operated by contact of the skin surface with the pricking position (22).
39. Blood analyzer according to Claim 38, characterized in that the triggering device (254) is formed by a key (264) provided in the pricking position (22).

40. Blood analyzer according to Claim 38 or 39, characterized in that the deployment device (254) is provided in the pricking position (22) and has a recess for the passage of the pricking element for execution of the pricking operation.

41. Blood analyzer according to one or more of the preceding claims, characterized in that a retraction mechanism (78) is provided by means of which a particular pricking element (8, 232) can be retracted directly following the pricking operation.

42. Blood analyzer according to Claim 41, characterized in that a spring means (74, 78, 108) is provided for retracting a particular pricking element (8, 114, 232) from the skin surface of the user.

43. Blood analyzer according to one or more of the preceding claims, characterized in that the particular pricking elements (8) pass through a particular spring means (74, 78).

44. Blood analyzer according to one or more of the preceding claims, characterized by a safety device which allows deployment of the pricking operation only when the device is being handled properly.

45. Blood analyzer according to one or more of the preceding claims, characterized in that the number of test means that can be handled as one unit amounts to 5 to 15.

46. Blood analyzer according to one or more of the preceding claims, characterized in that the device has an outside contour that is essentially in the form of a circular disk.

47. Blood analyzer according to one or more of the preceding claims, characterized in that it comprises a time display device.

48. Blood analyzer according to one or more of the preceding claims, characterized in that the housing body (4) can be worn on the wrist of a user by means of a strip that can be attached to it.